REMARKS

Claims 1-42 are pending in the present application. Claims 25-30 and 36-42 have been withdrawn from consideration.

Means-Plus Function Language

Regarding the means for passing a saline solution having a substantially constant chloride ion concentration through the cell, Applicants note that the specification states that a constant ion throughput can be achieved by controlling salinity and flow rate. (See page 7, lines 22-25).

Claim Objection

Claim 1 stands objected to for repeating the term "output solution." Claim 1 has been amended and Applicants request withdrawal of this objection.

Rejection of Claim Under 35 U.S.C. 112

Claim 34 stands rejected for being allegedly indefinite because of the claim dependency. Claim 34 has been amended to remove the dependency from claim 83 and Applicants request withdrawal of this rejection.

Rejection of Claim Under 35 U.S.C. 102(b) By Murakami

Claim 31 stands rejected under 35 U.S.C. §102(b) as being allegedly anticipated by U.S. Patent No. 4,432,856 to Murakami ("Murakami"). Claim 31 recites a flow regulator. Murakami does not describe a flow regulator. The Examiner identifies reference "22" as a flow regulator. However, reference "22" in Murakami is not a flow regulator 22 but is identified as circulation tank. (See col. 4, lines 24-29).

Rejection of Claims Under 35 U.S.C. 103(a) by Yamaguti in view of Brown

Claims 1-3, 5-6, 8-16 and 18-24 stand rejected under 35 U.S.C. 103(a) for being allegedly rendered obvious by US Patent No. 5,445,722 to Yamaguti ("Yamaguti") in view of US Patent No. 3,250,691 to Broun ("Broun").

According to the Examiner, Yamaguti describes means for creating a solution of constant chloride ion concentration and passing it to the electrolytic cell. However, Applicants request that the Examiner clarify exactly where in Yamaguti this is described. The present application describes that a substantially constant chloride concentration can be passed through the electrochemical cell in a number of ways. For example, the specification states in paragraph 30 that the throughput of chloride ions can be determined by controlling salinity and flow rate. Specifically, the specification states that a substantially constant chloride ion throughput can be achieved by providing a substantially constant salinity at a substantially constant flow rate (see paragraph 32). The present specification also states that if the saline solution is of variable concentration, the flow rate can be varied to provide a constant chloride feed into the cell by supplying the saline solution at a substantially constant concentration. (see paragraph 31).

The present application further describes that constant salinity may be achieved by dissolving a known quantity of salt in a known quantity of water or by producing a saline solution from a saturated salt solution which is then diluted to the required degree (see paragraphs 33-36).

In Yamaguti, there is no mention of any of these methods or any other methods for passing a saline solution having a substantially constant chloride ion concentration through an electrolytic cell.

Broun does not make up for this deficiency as Broun does not describe means for passing a saline solution having a substantially constant chloride ion concentration through the cell. As such, Applicants submit that claim 1 and all claims that depend therefrom are not rendered obvious by Yamaguti in view of Broun and Applicants request withdrawal of this rejection.

Further regarding claims 9-17, the Examiner states that the apparatus of Yamaguti includes an intermediate tank 21 for receiving anolyte. However, tank 21 of Yamaguti is not an

intermediate tank; but rather the final storage tank from which the final solution is used for its intended purposes. Specifically, Yamaguti states that the "acidic water W1 finally stored in the reservoir 21 can be used for rinsing, disinfecting or other purposes." (See col. 5, lines 49-51). If reservoir 21 were indeed an intermediate tank, Yamaguti would not state that the acidic water was "finally stored" in it. Further, there is no other tank to which reservoir 21 leads - therefore, reservoir 21 is not intermediate to another tank further downstream. The Examiner has also provided no explanation as to why Yamaguti's apparatus should be modified to include an intermediate tank. For at least this reason, Applicants request withdrawal of this rejection.

Further regarding claim 11, the Examiner states that Yamaguti includes measuring means 117a and 117b for measuring the electrical conductivity. The Examiner equates electrical conductivity with pH and redox potential. However, this is not accurate as an electrical conductivity probe does not necessarily measure pH and redox potential. Further, Yamaguti itself distinguishes a pH sensor, a redox potential sensor and an electrical conductivity sensor. Specifically Yamaguti states "the electrolytic water producing device of the present invention can produce electrolytic water having the desired pH value by effectively controlling electrolysis in accordance with the electrolytic degree of the electrolytic water such as pH value, electric conductivity (EC value), oxidation-reduction potential (ORP value) and ion concentration." (Col. 3, lines 50-56). Therefore, these parameters must be different since they are named separately. In addition, Yamaguti describes a separate electrical conductivity sensor 117a and a separate oxidation-reduction potential sensor. (See col. 5, lines 56-62). Therefore, Yamaguti's electrical conductivity sensor does not subsume other types of sensors that contribute to electrolytic degree since a separate redox potential sensor is employed. As such, Applicants submit that an electric conductivity sensor is not necessarily the same as a pH sensor and Applicants request withdrawal of this rejection.

Further regarding claims 12-14, Applicants submit that the Examiner has not provided any motivation for adding another storage tank to the apparatus of Yamaguti. As stated above, Yamaguti already provides a storage tank 21 so there is no reason to add another storage tank. Regarding the Examiner's explanation that it would have been obvious to add a storage tank for "transporting the output solution to provide a buffer of solution in case of emergency," the

apparatus of Yamaguti is directed to "producing acid water and alkaline water in large quantities." (See col. 1, lines 62-65) (emphasis added). Therefore, it is unclear why a small removable thank would be added to Yamaguti's system, since Yamaguti's system is clearly directed to a large-scale system. Further, the Examiner has not pointed to any references or teachings or knowledge in the art that supports the conclusion that a storage tank should be added in the case of an emergency. For at least this reason, Applicants submit that it would not have been obvious to add a storage tank to the apparatus of Yamaguti and Applicants request withdrawal of this rejection.

Further regarding claims 15 and 16, both claims recite a rinse water storage tank for receiving output solution and water (and thereby diluting the output solution). There is absolutely no teaching or suggestion to further dilute the output solution in Yamaguti. Yamaguti clearly calls for directly using the acidic water from the anode chamber for rinsing (see col. 5, lines 44-51) without further processing steps. For at least this reason, Applicants request withdrawal of this rejection.

Further regarding claim 21, there is absolutely no suggestion in Yamaguti of providing a service interface for displaying diagnostic information on the performance of the apparatus and the Examiner has not identified any motivation in any references or in the art to include this feature. For at least this reason, Applicants request withdrawal of this rejection.

Further regarding claim 32, as described above with respect to claim 11, Yamaguti does not describe a pH probe. For at least this reason, Applicants request withdrawal of this rejection.

Rejection of Claims Under 35 U.S.C. 103(a) By Yamaguti in view of Broun and Murakami

Claims 4 and 31-35 stand rejected for being allegedly rendered obvious by Yamaguti in view of Broun and further in view of Murakami. The Examiner recognizes that Yamaguti and Broun fail to describe a catholyte recirculation line but states that Murakami makes up for this deficiency in that Murakami allegedly describes controlling the pH of the product by adjusting the pH of the input anolyte by recirculating a portion of the catholyte to the input anolyte to control the pH. The Examiner then concludes that it would have been obvious to add a catholyte

recirculation line to the apparatus of Yamaguti as suggested by Murakami to control the pH of the anolyte output solution.

Applicants submit, however, that there is no motivation to combine the teachings of Murakami with the teachings of Yamaguti. Specifically, there is no motivation to adjust the pH of the input anolyte in Yamaguti by recirculating a portion of the catholyte to the input anolyte to control the pH, as described by Murakami because Yamaguti describes its own way of regulating pH. Specifically, Yamaguti provides for controlling the pH value of the output solution by controlling the electric conductivity and/or oxidation-reduction potential of the raw water or electrolyzed water. (See col. 2, lines 61-66). Yamaguti controls the electric conductivity and/or oxidation-reduction potential by providing sensors on the raw water supply passage and discharge passages to detect the electrolytic degree of the raw water and/or electrolytic water and providing a control unit to respond accordingly. Specifically, the control unit responds by controlling the electrolysis in the electrolyzer, supplying flow quantity of raw water and/or discharging flow quantity of electrolytic water in accordance with at least one signal output by the sensor (see col. 2, lines 38-46). As such, there is no motivation to combine the teaching of Murakami and Yamaguti and Applicant request withdrawal of this rejection.

Rejection of Claim Under 35 U.S.C. 103(b) by Yamaguti in view of Brown and Howard

Claim 7 stands rejected under 35 U.S.C. §103(a) as being allegedly rendered obvious by Yamaguti in view of Broun and further in view of U.S. Patent No. 5,026,946 to Howard ("Howard").

For reasons stated above, Yamaguti does not describe means for creating a solution of constant chloride ion concentration and passing it to the electrolytic cell neither Broun nor Howard make up for this deficiency. For at least this reason, Applicants request withdrawal of this rejection.

Rejection of Claim 17 Under 35 U.S.C. 103(a) by Yamaguti in view of Brown and Makchesky

Claims 17 stands rejected under 35 U.S.C. §103(a) as being allegedly rendered obvious by Yamaguti in view of Broun and further in view of U.S. Patent No. 5,932,171 to Malchesky

("Malchesky"). Claim 17 depends from claim 9, which recites an intermediate holding tank. For reasons stated above, Yamaguti and Broun do not describe this limitation and neither does Malchesky. For at least this reason, Applicants submit that claim 17 is not rendered obvious by Yamaguti in view of Broun and further in view of Malchesky.

CONCLUSION

It is respectfully submitted that the present application is now in condition for allowance, which action is respectfully requested. The Examiner is invited to contact Applicants' representative to discuss any issue that would expedite allowance of the subject application.

Any fees for extension(s) of time or additional fees required in connection with the filing of this response, are hereby petitioned under 37 C.F.R. § 1.136(a), and the Commissioner is authorized to charge any such required fees or to credit any overpayment to Kenyon & Kenyon's Deposit Account No. 11-0600.

Respectfully submitted,

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